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ABSTRACT

The Discovery-Expository Instrument is a classroom observation scale which measures the position of a teacher's presentation on a continuum of discovery presentation (in which the student is encouraged to solve problems with minimal help from the teacher), to expository presentation (in which the teacher provides a complete description and discussion of the subject). Teachers are rated on categories of behavior including: (1) definitive; (2) explanative; (3) clarifying; (4) exemplative; (5) summarizing; (6) question-raising; (7) problem-structuring; (8) directive-managing; and (9) neutral. Sixteen signs are also used to rate discovery versus expository teaching behavior. Four studies involving different grade levels were conducted which suggest that the instrument possesses relatively high inter-observer and intra-observer reliabilities and high validity. Using this instrument can help a researcher assess and, consequently, control the independent variable of level of discovery presentation in the classroom and the laboratory. The instrument also can be used to monitor the actual implementation of curriculum materials by the teacher, such as by gauging the nature and consistency of a teacher's use of new materials. An abbreviated version of the instrument; scoring directions; and the 16 signs and nine category descriptions are appended. (Author/GDC)

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An Instrument to Measure Discovery and Expository Presentations

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Abstract

The Discovery-Expository Instrument is a classroom observation scale which measures the position of a teacher's presentation on a continuum of discovery to expository presentations. Four studies were conducted which suggest that the instrument possesses relatively high inter-observer and intra-observer reliabilities and high validity. Using this instrument can help a researcher assess and, consequently, control the independent variable of level of discovery presentation in the classroom and the laboratory. The instrument also can be used to monitor the actual implementation of curriculum materials by the teacher, such as by gauging the nature and consistency of a teacher's use of new materials.

Problem

Discovery learning has been the focus of extensive research and controversy. Its theoretical and practical value has been widely examined in both classroom and laboratory situations. The results of research on discovery learning, however, have been highly contradictory. The contradictions can be attributed, in large part, to the lack of complete and explicit definition of the independent variable used in the research, particularly the extent of discovery, as opposed to expository, qualities in a teacher's presentation. This paper attempts to solve this problem by proposing an observation instrument which clearly and reliably measures the amount of discovery or expository behavior in a teacher's presentation in a classroom or laboratory setting.

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Perspective

Discovery presentation can be defined as a verbal presentation of subject matter by the teacher which encourages the student to independently solve a series of problems with minimal or no help from the teacher. The teacher may provide varying degrees of direction for the student, but does not generally offer rules or answers to problems. The presentation by a teacher who briefly introduces a topic to the class, such as column addition, and then instructs the students to solve a set of problems, but does not tell them the rules for solving the problems or the answers to the problems, exemplifies a discovery presentation. An expository presentation, on the other hand, is characterized by the teacher's complete description and discussion of a particular subject so that the student does not independently create the key concepts needed to solve problems or answer questions related to the presentation. A lecture about the moon illustrates an expository presentation. A discovery presentation lacks expository characteristics, and vice versa.

One major confusion in the results of research about discovery learning stems from the lack of explicit definition of discovery presentation, expository presentation, and similar categories. Boleratz (1967) found discovery presentation superior to expository presentation, but failed to define the exact nature of the expository condition and left the design of lessons which were included in that category to the teachers participating in the experiment. Scandura (1963) attempted to operationalize the variable by grouping teaching into three methodological

classes; constancy of teaching within a discovery or expository methodological class, however, could not be guaranteed or even assessed. Thus, lack of control of the independent variable is a source of error in many of the experiments about discovery learning (cf. Bassler, 1968; Craig, 1956; Kersh, 1962), and the need to quantitatively describe teaching is a first step in increasing control (Rosenshine and Furst, 1973). Other experiments focus on the relative merits of discovery teaching with minimum, intermediate, or maximum guidance of the student by the teacher (Bassler, 1968; Craig, 1956; Kittell, 1957; Wittrock, 1963). The comparability of degrees of guidance in different experiments is doubtful, even though, superficially, they appear to be well-defined points along this learning dimension. Contradictions in the results of these experiments, too, might be eliminated by a more careful operationalization of discovery or expository presentation. The limitations in these studies suggest the need to reliably, validly, and expediently assess the degree of discovery and expository behaviors in teacher presentations.

Since the most direct method for assessing teaching style is classroom observation, a structured observation instrument was considered to be the most appropriate means for evaluating the extent of discovery or expository presentation in a classroom. This decision was based on a review of a variety of instruments and an analysis of the rationale behind their construction (Flanders, 1960; Hughes, 1959; Medley and Mitzel, 1958; Morsh, 1956; Withall, 1949). For example, if an observer

separates qualitative judgments from quantitative judgments, the reliability of observations is increased (Ahmann and Glock, 1967). Also, observing a live classroom, rather than monitoring filmed classroom sessions or evaluating written transcripts of teacher's verbal behavior, offered the advantage of rapid, less expensive documentation and analysis of teaching style since observation and classification could be completed simultaneously. An instrument which has high reliability when used by a single observer, instead of multiple observers, was also desirable.

The OScAR of Medley and Mitzel (1958) offered these and other advantages. It was designed to measure the behavior of beginning teachers by recording teacher behaviors, student behaviors, and qualities of classroom activities. To measure teacher behaviors, the OScAR included a sign system of recording behaviors, where actual behaviors were checked at the end of a five-minute period if they occurred. The sign system was used alternately for six five-minute periods with a category system for recording behaviors; in this section, each statement or gesture by the teacher was classified into one of ten categories and recorded. The OScAR does not require highly trained observers, uses only one observer in a classroom, and separates recording of behaviors from the scoring of behaviors. To increase its validity in classifying behaviors, it requires the observer to classify behaviors in two ways, by making qualitative and non-qualitative judgments, and to use a time-sampling technique for observing and recording behaviors.

Method

The instrument was modeled on the OScAR of Medley and Mitzel (1958) and contains both a sign system and a category system of observing and recording. Twenty signs, later reduced to sixteen, and nine categories were developed to measure discovery presentation (see Appendix A, Recording Schedule Parts I and II, respectively, for the signs and categories). These were based on a review of the literature about discovery and expository presentations and discussions with professional educators. One observer alternates the use of Parts I and II for six five-minute intervals for either a live or filmed classroom setting. The instrument can be used to obtain either an overall representation of a teacher's presentation or a documentation of the components of the presentation.

The scoring system was developed to describe the total presentation. In Part I, all signs which, on the basis of a review of the literature, characterized discovery situations (items 2,6,7,10,11,13,14,16) received a rating of +1, and those which characterized expository presentations (items 1,3,4,5,7,9,12,15) received a rating of -1. Similarly, in Part II, three categories considered to describe statements which generally occur in discovery presentations -- question-raising, problem-structuring, and directive-management -- were assigned a value of +1; those associated with expository presentations -- definitive, explanative, clarifying, exemplative, and summarizing -- were assigned a value of -1; the neutral category was ignored in the scoring. Each X beside a sign or category

was assigned the value of that particular sign or category. For each interval, or for the entire observation period, the scores assigned to X's were summed, and then divided by the number of X's so counted· this number was named the Discovery-Expository Index. The Discovery-Expository Index ranged from -1 to +1. A score between -1 and .6 reflected a highly expository presentation; a score between -.59 and 0 represented a presentation with more expository than discovery behaviors; a score between 0 and .59 indicated a presentation with more discovery than expository behaviors; a score between .6 and +1 meant a highly discovery presentation.

Validation Studies and Results

Study 1, the first of four studies to determine the reliability and validity of the Discovery-Expository Instrument, used untrained observers. It showed that the instrument reliably and validly classified six five-minute segments of filmed classroom situations as either a discovery or expository presentation. Thirty-four undergraduate and graduate students in the researcher's sections of an Introductory Measurement course viewed four segments which showed one of several instructors teaching a portion of the Illinois Arithmetic Curriculum, and two segments which showed a science teacher lecturing to the film viewer. These observers were minimally trained in the use of the instrument: they read the directions on the form, received a brief oral explanation of the observation procedures, and then had any questions answered by the researcher. The reliability was determined by finding the proportion of discovery statements in the total number recorded for each film segment (Table 1),

Table 1

Proportion of Discovery Statements in Observation Intervals

Subject*	Description and Number Identification of Film Segments					
	Discovery				Expository	
	1	2	3	4	5	6
1	.97	.91	.95	.81	.07	.13
2	.96	.81	.97	.88	.05	.24
3	.95	.80	.94	.86	.05	.09
4	.92	.84	.95	.91	.06	.08
5	.96	.94	.96	.63	.03	.07
6	.97	.92	.97	.8[illegible]	.04	.17
7	.96	.77	.94	.6[illegible]	.04	.11
8	.94	.96	.94	.71	.06	.28
9	.95	.91	.94	.87	.05	.14
10	.96	.89	.96	.70	.03	.00
11	.97	.92	.94	.67	.04	.11
12	.93	.67	.94	.77	.03	.00
13	.93	.83	.94	.89	.05	.09
14	.97	.83	.96	.59	.04	.11
15	.95	.90	.95	.67	.05	.13
16	.92	.71	.98	.75	.02	.00
17	.97	.82	.95	.76	.04	.06
18	.96	.94	.94	.72	.06	.08
19	.98	.89	.97	.69	.05	.05
20	.96	.67	.97	.75	.04	.16
21	.98	.86	.97	.79	.06	.08
22	.95	.79	.95	.73	.55	.00
23	.96	.91	.95	.75	.04	.27
24	.96	.91	.95	.83	.05	.10
25	.87	.71	.83	.60	.15	.35
26	.91	.85	.89	.68	.12	.24
27	.91	.72	.94	.79	.05	.15
28	.9[illegible]	.81	.93	.83	.07	.22
29	.9[illegible]	.62	.92	.84	.09	.10
30	.87	.63	.92	.84	.11	.30
31	.88	.84	.91	.90	.10	.15
32	.94	.82	.94	.73	.10	.18
33	.93	.74	.94	.69	.04	.17
34	.91	.65	.89	.73	.08	.09

*Subjects 1-22 viewed different film segments from those viewed by subjects 23-34.

and seeing if the two types of segments differed in this regard. For the sign portion of the instrument, which was used for segments 1, 3, and 5, only subject 22 (for segment 5 only) made an incorrect discrimination. When the category portion of the instrument was used, for segments 2, 4, and 6, no classification errors occurred. The extent of inter-observer agreement in classifying a film segment as discovery or expository, indicated by an inspection of the data, suggests the overall reliability of the instrument. In contrast, the reliability of individual signs or categories was not high; some were recorded as having occurred as few as zero and as many as twelve times by different observers. This variability most likely can be attributed to the observers' receiving no training beyond a brief overview of the instrument and its use.

Validity was checked by using as the external criterion ratings of these segments as discovery or expository by six professors of education. The judges classified each five minute segment on a scale from 1 to 4, from highly expository to highly discovery, respectively, as defined in Appendix B. The coefficient of concordance (Ferguson, 1966) between ratings of the segments by the six judges was .98. Comparing the judges' classifications to the dichotomous classifications by the students of a segment as discovery or expository yielded 100% agreement. The student observers did not, however, consistently discriminate the four points on the discovery-expository continuum. In addition, four signs did not discriminate between discovery and expository presentations

and, therefore, were removed from the instrument.

Study 2 further suggested the validity of the Discovery-Expository Instrument. One of two trained observers watched four high school teachers' classroom presentations for thirty minutes each using the Discovery-Expository Instrument. The Discovery-Expository Index was obtained, and the teachers' presentations were ranked according to this score. These rankings were compared to rankings of these teachers made by their building principal according to the amount of discovery and/or expository behaviors generally present in their classroom presentations (Table 2). The Spearman rank-order coefficient of the relationship between

Table 2

Rankings of Teacher Presentations in Study 2

Teacher	Discovery-Expository Index Score	Rankings* of Presentation by	
		Discovery-Expository Instrument	Building Principal
A	.317	3	2
B	-.987	4	4
C	.873	1	1
D	.320	2	3

*The presentation with most discovery characteristics received a rank of 1; the presentation with most expository characteristics received a rank of 4.

these two sets of ranks is .80, which is generally considered an acceptable coefficient.

Study 3 measured the reliability of the Discovery-Expository Instrument when three trained observers used it. As part of their training, they viewed a series of short, filmed, classroom situations and used the Instrument to record the behaviors in the film. After each three-minute filme segment, the trainer and observers discussed which behaviors occurred in the film and the correct way of recording them; they then compared the ideal protocols to the observers' actual recording of the behaviors. This procedure was repeated for approximately one hour. The observers then used the Instrument while viewing thirty minutes of filmed classroom situations on two successive days; Table 3

Table 3

Discovery-Expository Index Scores in Study 3

Interval	Observer 1		Observer 2		Observer 3	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
1	-1.00	-.89	-.93	-.83	-.65	-.65
2	-.69	-.70	-.66	-.69	-.59	-.52
3	.23	.43	.20	.50	.29	.89
4	.13	.50	.09	.43	.25	.37
5	.86	.67	.83	.93	1.00	.89
6	.41	.25	.16	.15	.14	.20

reports their scores on the Instrument. The intraclass correlation coefficients (Hagood and Price, 1952) between the three sets of observations for each of six intervals for Time 1 in Table 3 were relatively high -- .88, .88, .85, .77, .31[1], and .73, for intervals 1-6, respectively. These coefficients represent the reliability when a single observer uses the instrument; if multiple observers would use the instrument, its reliability would be even higher. The reliability of the sign system (used in intervals 1, 3, and 5) does not differ significantly from that of the category system (used in intervals 2, 4, and 6). The coefficients, in general, decrease for each succeeding interval; this suggests that the instrument's reliability may decrease over time. Improved training procedures or greater concentration by observers could correct this.

To determine intra-observer reliability, or the consistency of a single observer's recording of behavior over time, the same three observers viewed thirty minutes of films on the day after training as well. The intra-observer reliability coefficients (Table 4) were determined by finding the Pearson-Product Moment correlation between the number of times each sign and each category was observed by the same observer at the two times. All coefficients were statistically significant, and the intra-observer reliability was practically significant as well.

Study 4 provided a final measure of the reliability and validity of the Discovery-Expository Instrument. Three mathematics teachers were

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[1]The low intraclass coefficient for the fifth interval can be explained by one observer's using one sign to classify a group of statements, while the remaining two observers did not apply this sign to any statement. Improved training of observers in using this sign should correct this error.

Table 4

Intra-Observer Reliabilities with
One Day Intervening Between Observations

Observation Interval Number	Reliability and (Standard Error of Measurement) for Observer		
	1	2	3
1	.84* (.08)	.94 (.03)	.91 (.04)
2	.97 (.02)	.97 (.02)	.74 (.12)
3	.97 (.02)	.92 (.04)	.84 (.08)
4	.96 (.02)	.98 (.01)	.98 (.01)
5	.83 (.08)	.88 (.06)	.91 (.04)
6	.91 (.04)	.92 (.04)	.99 (.01)
1, 3, 5 combined	.85 (.04)	.92 (.02)	.89 (.03)
2, 4, 6 combined	.95 (.02)	.95 (.02)	.93 (.03)
1, 2, 3, 4, 5, 6, combined	.93 (.02)	.94 (.01)	.93 (.02)

*All coefficients are significant at the .01 level.

trained for three hours in the use of the Instrument. They observed a class using the instrument, and then discussed their recordings with the trainer until they were judged to be competent in using the observation schedule. During the following week, each teacher used the Discovery-Expository Instrument while observing fifteen social studies classes taught by fifteen different teachers. The fifteen social studies teachers had each been observed previously by the social studies supervisor who subjectively ranked the teachers according to the extent to which their

classroom presentations could be characterized as discovery or expository. The Discovery-Expository Index scores of the three teacher-observers were averaged; the mean scores were rank-ordered and then compared to the rankings of the teachers' presentations by the social studies supervisor (Table 5). A Spearman rank-order correlation coefficient of .98,

Table 5

Rank-Order of Social Studies Teachers' Classroom Presentations

Ranking* of Teacher Presentations by Supervisor	Discovery-Expository Index Score	Ranking* Based on Index Score
1	.84	2
2	.91	1
3	.82	3
4	.79	4
5	.56	5
6	.42	7
7	.49	6
8	.31	9
9	.35	8
10	.21	10
11	-.01	11
12	-.63	13
13	-.52	12
14	-.87	14
15	-.95	15

*The lower the rank the more discovery characteristics in the teacher's presentation.

significant at the .01 level, was obtained between the two rankings. The intraclass correlation coefficient of the ratings of each teacher by the three observers was .82. These data further suggest the reliability and validity of the Discovery-Expository Instrument. Of course, additional studies with more teachers and observers would strengthen this claim.

Discussion

The Discovery-Expository Instrument was designed to operationally describe discovery and expository presentation in the classroom or laboratory in order to control the variation resulting from non-uniform definitions of these conditions in research. In addition, the Instrument can define various points on the discovery-expository continuum, thereby yielding more than a dichotomous classification of classroom presentations. The score obtained, the Discovery-Expository Index, can be used to equate presentations in different research conditions. By applying this instrument to research situations described in the literature, for example, conditions called "guided discovery" could be compared to determine if they indeed are alike, or a "guided discovery" condition can be compared to a "pure discovery" condition to determine the actual similarities and differences.

The Instrument can also be useful in monitoring curriculum evaluation projects, especially if they focus on the discovery approach to learning. The instrument would define the teacher's actual use of the materials being evaluated; this use can then be contrasted to the

intended use. The implementation of the curriculum in different classrooms can be monitored for uniformity so that the same curriculum would be evaluated in different settings.

The Instrument has the additional value of indicating what particular behaviors compose the general style or overall presentation of the teacher. For example, an expository classroom presentation which includes only explanative behaviors differs considerably from one composed primarily of clarifying behaviors. Two situations, both classified as high discovery presentations, also might differ considerably: a teacher who spends the entire time conferring with individual students has a very different presentation style from one who stands in front of the class and asks students a series of questions. Similarly, the instrument can be used to measure the consistency of a teacher's style. It can be used, then, to diagnose the components or consistency of teaching style and test their significance for various student outcomes. One teaching style may interact positively with some students' learning styles and negatively with others; or, it may be important for a teacher to adapt his or her style to student needs, the teacher's own teaching strengths and weaknesses, or the subject matter being presented. Meconi (1967) suggests, for example, that discovery presentation may be most appropriate for students with a certain level of intelligence -- gifted students in particular. According to this finding, the presence or absence of discovery presentation in a classroom might explain the performance of individual students or of various categories of students, such as the gifted or those with learning disabilities.

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Appendix A

The Discovery-Expository Instrument*

Directions to the Observer

You will be concerned with recording the teacher's behavior during a thirty minute period. You are to divide the thirty minutes into six five-minute intervals. You are to use two different types of recording forms, entitled Part I and Part II in the recording booklet. These parts are to be used alternately, that is, in the order in which they appear in the recording booklet. In addition to the instructions you are reading, this booklet includes a definition of the categories of Part II of the recording schedule, and six pages of recording schedule.

You are to use these six pages in the order in which they are stapled together. For the first five minutes you are to use page 1. For the second five-minute interval you are to use page 2. For the third five-minute interval you will use page 3, for the fourth -- page 4, for the fifth -- page 5, and for the sixth -- page 6. After each five-minute recording interval turn to the next page of the recording schedule where the appropriate part -- I or II -- will appear. You are to record on a different mimeographed sheet for each recording interval. Make sure that you alternate recording methods every five minutes and that you are using the form on the appropriate page of the recording booklet.

Directions for Part I: When a behavior that is included in this list of sixteen behaviors is done by the teacher, make an X out of the first slash (/ into X). Repeat this each time the behavior occurs. Cross out slashes from left to right next to the appropriate item. It is essential to remember that all behaviors refer to teacher behavior, and that an item is to be X'd each time it occurs.

Directions for Part II: You are to classify each statement that the teacher makes into one of the nine categories of Part II (descriptions follow). When you have determined the appropriate category for the classification of the statement, place an X beside the appropriate category in the first available box (fill in the boxes from left to right, line one than line two beside the item). There must be one X for each statement the teacher makes placed in a box by the appropriate category. It is essential to remember that only the teacher's behavior is to be recorded. The following are descriptions of the categories:

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*This is an abbreviated version; only one copy of the forms for Parts I and II are reproduced.

Descriptions of Categories of Part II

1. definitive - statement which defines a term or concept, in words or with a formula;
   e.g. Photosynthesis is the process by which a plant makes food.

2. explanative - statement which details a principle in more explicit terms or provides causes or effects;
   e.g. Birds fly south in winter because there is not enough food in the colder northern regions for them.

3. clarifying - statement which repeats, rewords, or rephrases a previous sentence, often after request by student to repeat what the teacher said;
   e.g. earlier statement: To find the mean, you sum all the scores and divide by N;
   current statement: To find the mean, you add all the scores together and divide this total by the number of scores.

4. exemplative - statement which is an example of an earlier statement;
   e.g. earlier statement: Divison is the reverse of multiplication.
   current statement: $4 \times 2 = 8$ is the reverse process of $8 \div 4 = 2$.

5. summarizing - statement that is part of a series of statements which recapitulate, re-integrate, or draw conclusions about earlier statements;
   e.g. In conclusion, we have discussed three measures of central tendency.

6. question-raising - statement, not necessarily in question form, which asks a student a question about the subject matter, generally requiring recall of earlier information;
   e.g. When I add two and two what answer do I get?
   Explain the process of digestion in a human being.

7. problem-structuring - statement which describes problem(s) to be solved by students (may be written on board as well as oral), generally asking or requiring students to apply, analyze, or synthesize previous knowledge;
   e.g. Factor each of the following problems;
   If you were the President, would you continue the war?

8. directive-managing - statement which gives directions to student or which organizes classroom in a new way;
   e.g. The class will arrange their chairs in a large circle.
   Please pass in your papers.

9. neutral - all other statements.

Recording Schedule - Part I

Directions: Place a cross-slash (X) over one slash beside the appropriate behavior each time the behavior occurs.

////////// 1. states underlying principle, rule, or formula for problem

////////// 2. says or suggests that an underlying principle, rule, or formula exists for solving a problem

////////// 3. describes and executes applications of a principle

////////// 4. supplies conclusions

////////// 5. states predictions made from a principle or consequences of a principle

////////// 6. asks students to predict or apply unstated principles

////////// 7. asks for generalizations, rules, or formulas about several immediately preceding examples or about solving a problem

////////// 8. gives example of a subtopic he or she is discussing

////////// 9. solves problems for class and explains procedures for solution

////////// 10. has students solve problems without teacher's help

////////// 11. asks students a question (can be a declarative statement)

////////// 12. answers student's or teacher's (his or her own) question without waiting for or requiring student to answer it

////////// 13. turns pupil raised question back to same pupil or class

////////// 14. confers with individual student

////////// 15. asks student to memorize something

////////// 16. lets student handle supplementary equipment or materials

Recording Schedule - Part II

Directions: Place an X in one box next to the appropriate category for each statement made by the teacher.

1. definitive										
2. explanative										
3. clarifying										
4. exemplative										
5. summarizing										
6. question-raising										
7. problem-structuring										
8. directive-managing										
9. neutral										

Appendix B

Judges' Rating Scale

Expository presentation is characterized by the teacher's complete presentation of a particular subject matter area for the student to learn without having to independently create the concepts to be learned or the relationships involved in solving problems related to the presentation.

Discovery presentation, in contrast to expository presentation, can be defined as a presentation of subject matter by the teacher which encourages the student to independently solve a series of problems with minimal or no help from the teacher; the teacher may provide varying degrees of direction for the student, but does not generally offer rules or answer for the problem.

You are to rate the films you are viewing after each five-minute interval on a scale from 1 to 4, as follows:

1 - The teacher lectures and has no interaction with the students during the major portion of the presentation. The teacher does all of the talking and demonstrating. The teacher neither asks nor answers questions. The presentation can be completely characterized by the definition of expository presentation above.

2 - In addition to expository presentation characteristics outlined above, the teacher asks or answers several questions. A limited or minimal verbal interchange between student and teacher occurs for the major part of the interval.

3 - The presentation has the qualities of discovery presentation as defined above. In addition, the teacher interacts with the students more extensively than the definition implies. The teacher asks a series of probing questions to guide the students in problem-solving.

4 - The presentation is characterized by the definition of discovery presentation above. The teacher asks a few directive questions, but mainly limits her presentation to asking students for answers to the problems he or she has structured.

Begin with Interval I. At the end of the first five-minute interval place an X on the line to the right of the number of the appropriate rating according to the scale above which best describes the teacher's presentation for that five-minute interval only. Repeat this at the end of each five-minute interval using the next available scale. Rate the behavior for the just-concluded interval only, not for any previous interval.

	1 highly expository	2 expository with interaction	3 guided discovery	4 highly pure discovery
Interval I	1 _____	2 _____	3 _____	4 _____
Interval II	1 _____	2 _____	3 _____	4 _____
etc.				